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IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Title:	"Method and Apparatus for Automatically Processing Acquired Data and Contextual Information and Associating the Same with Available Multimedia Resources"	
Applicant(s): **MINER**, Cameron		
Attorney Docket No.: AM9-99-0227		
Serial No.: 09/515,699	Examiner:	Young N. Won
Filed: February 29, 2000	Art Unit:	2155

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APPEAL BRIEF

Dear Sir:

This appeal brief is submitted under 35 U.S.C. §134. This appeal is further to Appellants' Notice of Appeal filed herewith.

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(1)   Real Party in Interest

The real party in interest is International Business Machines Corporation.

(2)   Related Appeals / Interferences

No other appeals or interferences exist that relate to the present application or appeal.

(3)   Status of Claims

Claims 1 - 3, 5 - 14,16 - 20, 39, 40, and 42 - 46 are pending and remain in the application. In the Final Office Action of May 12, 2003 and the Advisory Action of June 27, 2003, the claims were indicated to be finally rejected as being unpatentable over Jain et al., [hereafter Jain], U.S. Patent No. 5,911,139 in view of Polnerow et al., [hereafter Polnerow], U.S. Patent No. 5,813,006.

(4)   Status of Amendments

No amendments are outstanding.

(5)   Summary of Invention

The present invention relates to a software program for accessing, transducing, enhancing, searching, or otherwise processing various **contextual** data acquired from objects. The present invention automatically associates the acquired **contextual information** with available multimedia resources and presenting the results to the user.

The term "**contextual**" has been clearly defined as follows: "As used herein, "**contextual**" means or implies the surrounding circumstances in which an object exists or an event occurs**. For example, the **contextual** content of a photograph can be all the information surrounding the situation in which the

photograph is taken, including special and physical parameters such as time, location, elevation, etc., as well as information gathered by various sensors such as temperature, pressure, humidity, light level, sound, and acceleration sensors, and user interface elements such as buttons, switches, etc. The **contextual** data helps to understand the context of the acquired data." Reference is made to page 5, lines 5 – 12 of the specification.

The present system includes a **contextual** multimedia association module which is installed on a **contextual** input device. In use, the user captures input data about an object or item of interest by means of the **contextual** input device, and transmits the captured data to the personal assistant device. The personal assistant device automatically digitizes and processes the input data, and further automatically formulates a query, creates or updates a digital user profile, and transmits the query to the **contextual** multimedia association module. The **contextual** multimedia association applies the query to numerous data stores, optimizes the search results, and then presents the optimized search results to the user.

The present system provides various features, including but not limited to the following:

Image magnification with anti-jitter or jitter reduction feature.

Image search capability, whereby the system automatically formulates a query, searches for, and matches the image content of an object to images in various data stores. This image search capability allows the system and method to be used in various commercial applications such as:

• Information access based on data acquired from real objects.

• The association of on-line "virtual" information with physical "real" objects.

• E-commerce: The system enables on-line shopping in-situ based on imaged items.

• Remote medical and treatment: For example, a dermatologist can image a skin rash, and the system compares a skin legion to known diseases and acquires additional information from various online medical databases.

• Security, personal information, electronic validation of information to create a "digital witness", digital notary public, digital signature capture, insurance: For example, facial recognition of a customer can be taken at the time of sale. As another example, a signature can be captured or insurance photos taken and authenticated by time and location. As another example, the system can validate images and their authenticity.

• Advanced information access in museums: For example, images of art works can be acquired by a curator, and the system will recognize these works and present relevant details.

• Automotive diagnostic: For example, a mechanic can image a car vehicle identification number (VIN) and take a picture of the part of interest. The system will match the images and display relevant pages from shop manuals.

• Triage: For example, damages and / or injuries can be taken at an accident site, and the system can perform an automatic search and sorting (e.g. triage) of patients, suggest courses of action, and request authorization for settlement, repair, indemnification, medical care, and so forth.

Expanded optical character recognition (EOCR) of text acquired from real objects, such as books, road signs, shopping, and so forth, with automatic Internet search capability.

Education, training and translation; for example, students can input a query, or the system can automatically formulate a query from an imaged object of interest, and the system will OCR the relevant text, perform translation if needed, and undertake an in-depth search of data stores around the world, even if the information is stored in different languages. The search results are translated to the language of interest and presented to the student. This feature can also be used for in-store shopping. For example, when shopping for books, book titles could be scanned, and related books will be displayed.

Audio to text search capability, whereby sounds, such as animal sounds, are captured and compared to sounds in various data stores to identify the animal specie or other requested information about the source of the audio signal.

Spatial and temporal recordation of events, wherein for example, a user can combine visual information with virtual or invisible information such as GPS. In one application, the system allows the user to spatially record sound, and whenever the user reaches a destination location the system reminds the user by playing the recorded message.

Real-time solution of mathematical or geometric problems, real time problem solving. For example, this feature can be used to balance check books, to convert currencies, and in a variety of similar other applications. In another specific example, the system can assist the user in solving geometric problems using the imaged information and present solutions to the user. Practical applications involve home repair and replacing parts when dimensions are not known.

Mass spectrometry: For example, a user can acquire chemical and other data about a material, and the system will automatically formulate and apply a search for identifying the material.

(6) Issue Presented for Review

The issue for review is whether claims 1 - 3, 5 - 14, 16 - 20, 39, 40, and 42 - 46 are obvious in light of Jain in view of Polnerow.

(7) Grouping of Claims

Claims 1 - 3, and 5 - 12 are grouped together and stand and fall together.

Claims 13, 14, and 16 - 20 are grouped together and stand and fall together.

Claims 39, 40, and 42 - 46 are grouped together and stand and fall together.

(8) Arguments

A - Introduction

The issue under review is whether claims 1 - 3, 5 - 14, 16 - 20, 39, 40, and 42 - 46 are obvious in light of Jain in view of Polnerow.

Applicant respectfully traverses the obviousness rejection of these claims, and submits that the claims on file are not obvious in view of Jain in light of Polnerow, and are patentable thereover. In support of this position, Applicant submits the following arguments:

B - Legal Standards for Obviousness

The following legal authorities set the general standards in support of Applicant's position of non obviousness, with emphasis added for added clarity:

- MPEP §2143.03, "All Claim Limitations Must Be Taught or Suggested: To establish prima facie obviousness of a claimed invention, **all the claim**

limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "**All words in a claim must be considered** in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)."

- MPEP §2143.01, "The Prior Art Must Suggest The Desirability Of The Claimed Invention: There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (**The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a prima facie case of obvious was held improper**.). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

- "**Obviousness cannot be established** by combining the teachings of the prior art to produce the claimed invention, **absent some teaching or suggestion** supporting the combination." In re Fine, 837 F.2d at 1075, 5 USPQ2d at 1598 (citing ACS Hosp. Sys. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)). **What a reference teaches** and whether it teaches toward or **away from the claimed invention** are questions of fact. See Raytheon Co. v. Roper Corp., 724 F.2d 951, 960-61, 220 USPQ 592, 599-600 (Fed. Cir. 1983), cert. denied, 469 U.S. 835, 83 L. Ed. 2d 69, 105 S. Ct. 127 (1984). "

- "When a rejection depends on a combination of prior art references, there must be **some teaching, suggestion, or motivation** to combine the references. See In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987)." Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention **where there is some teaching, suggestion, or motivation** to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See MPEP 2143.01; In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

- "With respect to core factual findings in a determination of patentability, however, the **Board cannot simply reach conclusions based on its own understanding or experience** -- or on its assessment of what would be basic knowledge or common sense. **Rather, the Board must point to some concrete evidence in**

the record in support of these findings." See In re Zurko, 258 F.3d 1379 (Fed. Cir. 2001).

- "We have noted that **evidence of a suggestion, teaching, or motivation to combine** may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), Para-Ordinance Mfg. v. SGS Imports Intern., Inc., 73 F.3d 1085, 1088, 37 USPQ2d 1237, 1240 (Fed. Cir. 1995), although "the suggestion more often comes from the teachings of the pertinent references," Rouffet, 149 F.3d at 1355, 47 USPQ2d at 1456. The range of sources available, however, does not diminish the requirement for actual evidence. That is, **the showing must be clear and particular**. See, e.g., C.R. Bard, 157 F.3d at 1352, 48 USPQ2d at 1232. **Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence."** E.g., McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993) ("Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact."); In re Sichert, 566 F.2d 1154, 1164, 196 USPQ 209, 217 (CCPA 1977)." See In re Dembiczak, 175 F. 3d 994 (Fed. Cir. 1999).

- "To prevent the use of hindsight based on the invention to defeat patentability of the invention, **this court requires the examiner to show a motivation to combine the references** that create the case of obviousness. In other words, **the examiner must show reasons** that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references **for combination in the manner claimed**." See In re Rouffet, 149, F.3d 1350 (Fed. Cir. 1998).

- The mere fact that references can be combined or modified does not render the resultant combination obvious **unless the prior art also suggests the desirability of the combination**. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, **there must be a suggestion or motivation in the reference** to do so." 916 F.2d at 682, 16 USPQ2d at 1432.). See also In re Fritch, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992) (flexible landscape edging device which is conformable to a ground surface of varying slope not suggested by combination of prior art references).

- If the **proposed modification would render the prior art invention being modified unsatisfactory** for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

C. Jain

Jain generally describes a system and method for **content-based** search and retrieval of visual objects. A base visual information retrieval (VIR) engine utilizes a set of universal primitives to operate on the visual objects. An extensible VIR engine allows custom, modular primitives to be defined and registered. A custom primitive addresses domain specific problems can utilize image understanding techniques. Object attributes can be extracted over the entire image or over only a portion of the object. **A schema is defined as a specific collection of primitives**. A specific schema implies a specific set of visual features to be processed and a corresponding feature vector to be used for **content-based** similarity scoring. A primitive registration interface registers custom primitives and facilitates storing of an analysis function and a comparison function to a schema table. A heterogeneous comparison allows objects analyzed by different schemas to be compared if at least one primitive is in common between the schemas. A threshold-based comparison is utilized to improve performance of the VIR engine. A distance between two feature vectors is computed in any of the comparison processes so as to generate a similarity score. Refer to the Abstract.

"The VIR Engine 120 comprises two main modules: an "Image Analysis" module 122 and an "Image Comparison" module 124. The image analysis module 122 receives inputs from either module 108 or 110 to generate a query target or from the insertion module 112 for adding a new image into the database 132. The output of the image analysis module 122 is a feature vector (FV) that describes the visual object passed to it by one of modules 108, 110 or 112. The FV is passed on to the database engine 130. In addition, if module 112 was used to insert the image into the database, both the FV for the image and the image itself are stored in the database 132 (as seen in FIG. 5B). The image analysis module 122 will be described in greater detail hereinbelow.

The image comparison module 124 receives a query target FV and a FV for the image being tested or compared from the database engine 130. The output of the image comparison module 124 is a similarity score that is sent to a "Ranked List Management" module 134. A plurality of images from the database 132 are compared one at a time to the query image by the image comparison module 124. The resultant similarity scores are accumulated by the module 134 so as to provide a rank in an order of their similarity to the query image. The ranked results of the list management module 134 are provided to a "Thumbnail Results Browser" 136 for display to the user 102 through the computer I/O 104. An exemplary screen display of ranked results is shown in FIG. 4." Reference is made to FIG. 1A, and further to column 9, lines 41 - 67.

"What is needed is a new multimedia information system technology model such as a visual information management system (VIMSYS) model. Unlike traditional database systems, this model recognizes that most users prefer **to search image and video information by what the image or video actually contains, rather than by keywords or descriptions associated with the visual information**. The **only** proper method by which the user can get access to the **content of the image** is by using image-analysis technology **to extract the content from an image or video**. Once extracted, **the content represents most of what the user needs in order to organize, search, and locate necessary visual information.**

This breakthrough concept of **content extraction** alleviates several technological problems. The foremost benefit is that it gives a user the power to retrieve visual information **by asking a query like "Give me all pictures that look like this."** The system satisfies the query by **comparing the content of the query picture** with that of all target pictures in the database. This is called Query By Pictorial Example (QBPE), and is a simple form of **content-based retrieval**, a new paradigm in

database management systems." Reference is mad to column 2, lines 53 - 65, with emphasis added.

D. Application of the Obviousness Standard to the Present Invention

D.1. Elements not disclosed by Jain

Applicant respectfully submits that the following elements and combination of elements and resulting features recited in the representative independent claim 1 and the claims dependent thereon, are not disclosed in Jain (with emphasis added):

> "1. A system for **automatically** associating **contextual input data** with available multimedia resources, comprising:
>> a contextual input device for **capturing the contextual input data**;
>> an assistant device for processing the **contextual input data** captured by the contextual input device, and for **formulating a query based on processed contextual input data and a user profile**; and
>> a contextual multimedia association module for **associating the processed contextual input data** with the multimedia resources and for generating association matches." Emphasis added.

D.2. Summary of Arguments

Applicant respectfully submits a summary of the arguments to be developed in more detail in subsequent sections:

D.2.a: <u>Jain does not capture contextual input data.</u>

D.2.b: <u>Jain does not formulate a query</u> based on the processed <u>contextual input data and the user profile.</u>

D.2.a: Jain does not capture contextual input data

As it is clear from the Jain excerpts above, **Jain's method is strictly content-based**, in that it is limiting to discovering and cataloguing <u>the content of the input image</u>. **Jain does not capture contextual input data**, as understood and defined in the present application. To this end, and due to the importance of the concept of contextual data versus content, Applicant has once again reproduced one of the excerpts of Jain: "... using image-analysis technology **to extract the content from an image or video**. Once extracted, <u>**the content represents most of what the user needs in order to organize, search, and locate necessary visual information.**</u>"

In essence, Jain has clearly stated that **the content represents most of what the user needs**, thus expressly distinguishing over the contextual input data.

<u>The term "contextual" is a key concept to the present invention, and is **recited eight times** in the instant claim 1.</u> Applicant respectfully requests that this term be given its proper weight and not be summarily dismissed. The term "contextual" is clearly defined in the present application as follows:

"As used herein, **"contextual" means** or implies **the surrounding circumstances in which an object exists or an event occurs**. <u>For example, the contextual content of a photograph can be all the information surrounding the situation in which the photograph is taken, including special and physical parameters such as time, location, elevation, etc.</u>, as well as information

gathered by various sensors such as <u>temperature, pressure, humidity, light</u> <u>level, sound, and acceleration sensors, and user interface elements such as</u> <u>buttons, switches, etc.</u> The contextual data helps to understand the context of the acquired data." Reference is made to page 7, lines 5 - 12 of the present application, with emphasis added for clarity.

"<u>Exemplary</u>, non-exclusive <u>contextual data include environmental and</u> <u>geospatial coordinates, time, temperature, location, speed, motion,</u> <u>acceleration, and other parameters</u>." Reference is made to page 7, lines 1 - 3 of the present application, with emphasis added for clarity.

The concept of capturing contextual input contextual input data, and then processing the captured contextual input data is neither taught nor suggested in Jain. **Jain's system is content-based, as opposed to context-based teaching of the** **present invention**, in that Jain seems to disregard **the surrounding** **circumstances,** such as the environmental and geospatial coordinates, time, temperature, location, speed, motion, or acceleration **in which the content exists or** **the event occurs**.

The Advisory Action states that: "In response to the independent claims, Jain clearly teaches the applicant's argument of "contextual" information (see col.7, lines 27-53; Fig.3; and col.11, lines 10-17). Although Jain teaches of content-based, such limitation in the reference does not exclude that his system cannot be contextual or deal with contextual data, since the definition of content and context are not opposite."

It is simply not clear to Applicant where do the foregoing cited sections of Jain, i.e., col.7, lines 27-53; Fig.3; and col.11, lines 10-17, describe contextual information. Once again, Applicant wishes to reiterate that the term **"contextual"** has been

clearly defined in the instant application, and **must NOT be redefined** by the Examiner.

The Examiner refers to "applicant's argument of "contextual" information". However, Applicant's consistent position and definition of the term "contextual" has been **the surrounding circumstances in which an object exists or an event occurs**. For example, the contextual content of a photograph can be all the information surrounding the situation in which the photograph is taken, including special and physical parameters such as time, location, elevation, etc., as well as information gathered by various sensors such as temperature, pressure, humidity, light level, sound, and acceleration sensors, and user interface elements such as buttons, switches, etc.

Applicant respectfully submits that the Examiner has clearly failed to prove that Jain describes contextual information. In fact, Applicant's second statement above, seems to imply that Jain has taught the content-based concept, and since content-based limitation "does not exclude that his system cannot be contextual or deal with contextual data, since the definition of content and context are not opposite," then Jain describes the contextual information.

In response, Applicant rejects the Examiner's argument and submits that the Examiner has not met his burden of proving prime facie obviousness, in that:

1. The Examiner has neither expressly nor by implication shown that Jain teaches the use of contextual information as defined by the present application.

2. The reasoning that a concept is described because it is not excluded is neither tenable nor justifiable, and does not meet the scrutiny of the well settled legal authorities above.

3. Jain expressly states that: the content represents most of what the user needs, thus expressly distinguishing over the contextual input data.

D. 2.b. Jain does not teach automatically formulating the query based on the contextual input data and the user profile

(1) Applicant agrees with the Examiner that Jain does not teach automatically formulating the query based on the user profile.

(2) Furthermore, Applicant submits that Jain does not teach automatically formulating the query based on the **contextual input data**, since, as stated earlier, Jain seems to ignore the contextual data, and rather focuses on the content data.

In order to compensate for the first missing element, the office action resorts to Polnerow, as discussed below.

D. 3. The combination of Jain and Polnerow is improper

In support of the combination of Jain and Polnerow, the office action adds that Polnerow teaches searching based on user profile (see col. 1, lines 55-65 and column 10, lines 53-54), reasoning that:

> "It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teachings of Polnerow within the system of Jain by automatically searching database for information based on user profile within the contextual input data and multimedia data system associating system and method because. Jain teaches of user **specific property or attribute of the image** for performing queries (see col.4, lines 21-40) and such attributes could be users preference according to the users

profile. Since user supplies the property or attributes, **theses attributes or properties could be derived according to users preference such as users profile**."

Applicant respectfully traverses this rejection ground and submits the following arguments:

(1) Jain limits the "specific property or attribute of the image" to what is referred to as "primitives" of the content. See for example, column 6, lines 20-21 in Jain. There is, however, no justification or teaching in Jain to expand the "specific property or attribute of the image" to cover "the user's profile," particularly that Jain does not consider the user's profile to be an attribute of the image. This latter point is discussed in more detail below.

(2) In addition, Polnerow does not disclose formulating the query based on the user's profile "**for automatically associating contextual input data** with available multimedia resources."

(3) Furthermore, neither Polnerow nor Jain teaches or suggests "formulating a query based on **processed contextual input data**," as presented earlier, and as clearly defined in the present application.

(4) The Examiner bases the ground for combining Jain on Polnerow on the user's profile, but does not provide any ground for combining these two references based on the **processed contextual input data**. Applicant submits that these two references cannot be justifiably combined based on the **processed contextual input data**, since this feature is neither suggested nor taught by any of these two references.

(5) **In the Advisory Action**, the Examiner states the following ground in support of combining the prior art references:

> "2. In response to applicant's argument that there is no suggestion to combine the references, ... **In this case, all the references teach of means for searching for information by means of querying**."
>
> 3. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the **rejections are based on combinations of references** ..." (Emphasis added).

In response to Paragraph 2 above, it is not clear to the Applicant how the fact that the references teach searching by query justifies the combination of these two references! Applicant is not familiar with the legal authority on which the Examiner bases this rejection ground. Does the Examiner mean to say that just because the two cited references teach searching by query they could be combined?

In response to Paragraph 3 above, Applicant's arguments clearly address the combination of the two references. Prior to discussing the combination as stated by the Examiner, Applicant would need to concede that such a combination is justifiable. Applicant does not make such an admission, and clearly states that the combination of the two cited references is not justified under the prevailing legal authorities above.

It is therefore not clear to Applicant how Applicant should "attack" or distinguish over a combination that is not justified *ab initio*!

As a result, claim 1 and the claims dependent thereon are allowable, and such allowance is respectfully requested. Similarly, independent claims 13 and 39 and the

claims dependent thereon are allowable for reciting comparable elements to those of claim 1.

E. Dependent Claims

E. 1.   Claims 7, 17, and 43

Claims 7, 17, and 43 were rejected under 35 U.S.C. 103(a) as being unpatentable over Jain in view of Bull.

Applicant respectfully traverses this rejection and submits that the rejected claims are not obvious in view of Jain and Bull, and are thus patentable thereover. In support of this position, Applicant submits Bull was referred to as teaching the development of a user profile.

Applicant respectfully submits that the same arguments presented earlier in favor of allowance of claim 1 over Jain and Polnerow are equally applicable to the combination of Jain and Bull. Further, Bull stands for the generally known concept of developing a user profile, which, by itself, does not constitute the novel and patentable aspect of the present invention.

The combination of Jain and Bull does not disclose the following elements of the representative claim 7:
- "formulating a query based on processed contextual input data and a user profile"; and
- "the assistant device develops the user profile based on association matches that were previously presented to the user".

Claim 7 and the claims dependent thereon are allowable, and such allowance is respectfully requested. Similarly, independent claims 17 and 43 and the claims dependent thereon are allowable for reciting comparable elements to those of claim 7.

E. 2.   Claims 8, 18, and 44

The office action states that with regard to claims 8, 18, and 44, "**Jain does not teach wherein the assistant device updates the user digital profile based on recent association matches**. Bull teaches of updating the user digital profile based on recent association matches (see col.8, line 65 to col.9, line 2 and col.12, lines 2-4). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teachings of Bull within the system of Jain by updating user profile within the contextual input data and multimedia data system associating system and method because, this would keep track of the potential future user as well as keep track of the user's preferences for future search "primitives" to speed up the processing time." Emphasis added.

Applicant respectfully submits that the following elements and combination of elements and resulting features recited in the representative dependent claim 8 and the claims dependent thereon, are not disclosed in Jain (with emphasis added):

"8. The system according to claim 7, wherein the assistant **device updates the user digital profile based on recent association matches**." Emphasis added

Applicant incorporates herein the presentation made earlier in favor of the allowance of claim 7, and further respectfully submits that claim 8 depends on claims

1 and 7 as now amended, to include the following elements that are missing from Jain and Bull:

- "formulating a query based on processed contextual input data and a user profile";
- "the assistant device develops the user profile based on association matches that were previously presented to the user"; and
- "the assistant device updates the user digital profile based on recent association matches".

Claim 8 and the claims dependent thereon are allowable, and such allowance is respectfully requested. Similarly, independent claims 18 and 44 and the claims dependent thereon are allowable for reciting comparable elements to those of claim 8.

E. 3.   Remaining dependent claims

The remaining dependent claims are allowable for depending on the allowable claims 1, 13, and 39, as presented earlier.

CONCLUSION

All the claims presently on file in the present application are in condition for immediate allowance, and such action is respectfully requested.

Respectfully submitted,

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APPENDIX A

CLAIMS ON APPEAL

1. A system for automatically associating contextual input data with available multimedia resources, comprising:

a contextual input device for capturing the contextual input data;

an assistant device for processing the contextual input data captured by the contextual input device, and for formulating a query based on processed contextual input data and a user profile; and

a contextual multimedia association module for associating the processed contextual input data with the multimedia resources and for generating association matches.

2. The system according to claim 8, wherein the assistant device automatically formulates the query.

3. The system according to claim 1, wherein the assistant device automatically formulates the query based on a contextual input from the user.

5. The system according to claim 3, wherein the contextual input device digitizes the contextual input data.

6. The system according to claim 5, wherein the assistant device presents the association matches to a user.

7. The system according to claim 3, wherein the assistant device develops the user profile based on association matches that were previously presented to the user.

8. The system according to claim 7, wherein the assistant device updates the user digital profile based on recent association matches.

9. The system according to claim 8, wherein the contextual multimedia association applies the query to a data store on a network.

10. The system according to claim 9, wherein the network includes the World Wide Web.

11. The system according to claim 7, wherein the contextual input data are based on image signals; and

wherein the assistant device enhances the quality of the image signals.

12. The system according to claim 7, wherein the contextual input data are based on audio signals; and

wherein the assistant device enhances the quality of the audio signals.

13. A method for automatically associating contextual input data with available multimedia resources, comprising:

capturing the contextual input data;

processing the contextual input data;

formulating a query based on processed contextual input data and a user profile; and

associating the processed contextual input data with the multimedia resources and generating association matches.

14. The method according to claim 18, wherein formulating the query comprises automatically formulating the query based on a contextual input from the user.

16. The method according to claim 13, further comprising presenting the association matches to a user.

17. The method according to claim 16, further comprising developing a digital profile for a user based on association matches which were previously presented to the user.

18. The method according to claim 17, wherein developing the digital profile comprises updating the user digital profile based on recent association matches.

19. The method according to claim 18, wherein associating the processed contextual input data comprises applying the query to a data store on a network.

20. The method according to claim 18, wherein the contextual input data are based on any one or more of image signals or audio signals; and
    wherein processing the contextual input data comprises enhancing the quality of the any one or more of image signals or audio signals.

39. A system for automatically associating contextual input data with available multimedia resources, comprising:
    means for capturing the contextual input data;
    means for processing the contextual input data and formulating a query based on processed contextual input data and a user profile; and
    means for associating the processed contextual input data with the multimedia resources and generating association matches.

40. The system according to claim 42, wherein the means for processing and formulating the query comprises means for automatically formulating the query based on a contextual input from a user.

42. The system according to claim 39, further comprising means for presenting the association matches to a user.

43. The system according to claim 42, further comprising means for developing a digital profile for a user based on association matches which were previously presented to the user.

44. The system according to claim 43, wherein the means for developing the digital profile comprising means for updating the user digital profile based on recent association matches.

45. The system according to claim 42, wherein the means for associating the processed contextual input data comprises means for applying the query to a data store on a network.

46. The system according to claim 42, wherein the contextual input data are based on any one or more of image signals or audio signals; and
wherein the means for processing the contextual input data comprises means for enhancing the quality of the any one or more of image signals or audio signals.